



Quick Reads From NSF.gov

May 31, 2018

01

USAF and NSF announce partnership in science and engineering research

The United States Air Force (USAF) Secretary Heather Wilson and NSF Director France Córdoba signed a Letter of Intent, May 9, 2018, creating a new partnership for collaboration on scientific and engineering research to bolster national security.

The Letter of Intent initiates a strategic partnership focused on research in four areas of common interest: space operations and geosciences, advanced material sciences, information and data sciences, and workforce and processes. Learn more in this NSF [News Release](#).



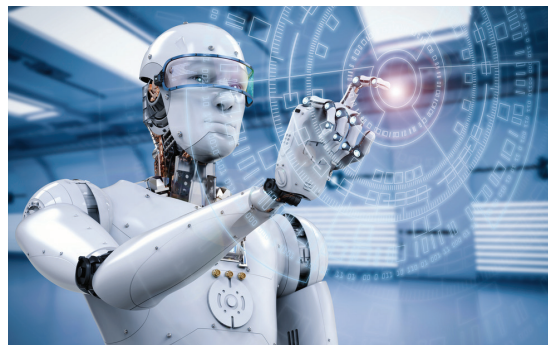
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02

Statement on Artificial Intelligence for American Industry

The White House convened academic researchers, industry experts and federal leaders at an event on Artificial Intelligence for American Industry on May 10, 2018. NSF Director France Córdoba participated in the event and issued the following statement.

“Artificial intelligence (AI) is transforming every segment of American industry. It is making agriculture more precise and efficient, giving us new medical diagnostics that save lives, and creating the promise of autonomous transportation and advanced manufacturing. NSF is proud to stand with the White House and the rest of the federal science and technology enterprise to ensure that our nation’s values are reflected in the development of critical technologies such as AI. NSF’s investments to nurture AI over the last several decades have laid the foundation upon which today’s breakthroughs are being built.” Read more in this NSF [Press Statement](#).

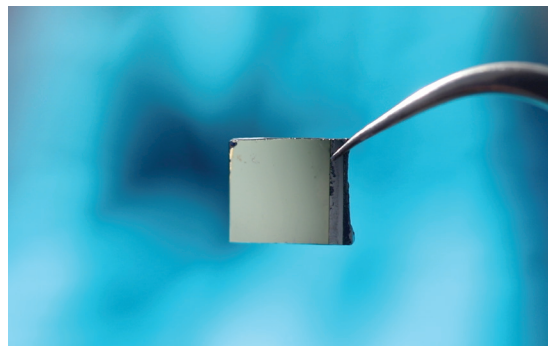


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03

Chemical sensing chip sniffs out cocaine within minutes

What if you could test for cocaine, opioids and marijuana as quickly as a breathalyzer identifies alcohol? A new, low-cost chemical sensing chip brings us one step closer to this portable tech, which has long been on the wish list of police officers and others looking to monitor drug use and curb dangerous driving. Read the full story in this NSF [News From the Field](#) item.



04

Stopping hackers, protecting businesses

An NSF-funded researcher who received more than a decade of support for research on web-based malware developed new tools to identify and counteract malware. The researcher helped launch a company, StopTheHacker, whose artificial intelligence and machine learning technology provided website security for numerous entities including multinational companies and small businesses. Find out more in this NSF [Impact](#).



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05

Federal partners release Interagency Strategic Plan for Microbiome Research

A group of 23 U.S. government agencies, including NSF, have joined to produce the Interagency Strategic Plan for Microbiome Research, which outlines the objectives, structure and principles for coordinated research in this important field of study. Through enhanced collaboration, the 23 agencies that drafted the strategic plan aim to take concrete steps toward understanding microbes and the mechanisms that govern how they act. Learn more in this NSF [News Release](#).



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06

The genetic path to biodiversity

Butterflies and moths constitute 10 percent of all known biodiversity in terms of numbers of named species. Understanding the formation of color patterns has long played a central theme in understanding biology, and butterfly wing color patterns represent a prime model to explore the history, genes and mechanisms underlying wing patterning. The genome editing tool CRISPR helps reveal genetic regulation behind colors and patterns in butterfly wings. Learn more by watching this NSF [Science Nation video](#).



07

Lifting the economy on hawks' wings

America's smallest raptor, the American kestrel, can boost economies in Michigan and other fruit-growing states, new research shows. Kestrels dine on bugs, small mammals and fruit-eating birds. More kestrels mean fewer pests, and the tiny hawks' mere presence can produce measurable improvements, say researchers. This is the first study to measure regional job creation aided by the activity of native predators. Read more in this NSF [Discovery](#).

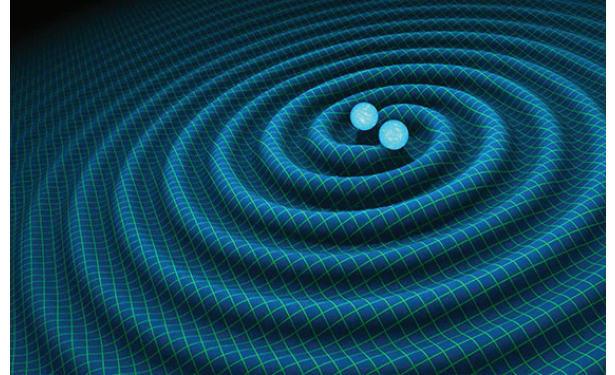


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08

Dozens of binaries from Milky Way's globular clusters could be detectable by LISA

A next generation observatory, called LISA (Laser Interferometer Space Antenna), is expected to be in space in 2034, and it will be sensitive to gravitational waves of a lower frequency than those detected by the Earth-bound Laser Interferometer Gravitational-Wave Observatory. Read the full story and learn more in this NSF [News From the Field](#) item.



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09

Pollution-related disease presents global environmental challenge

Pollution is linked to a startling 16 percent of all premature deaths worldwide, "a statistic that highlights our failure to address the causes of disease," says Gabriel Filippelli of the Center for Urban Health at Indiana University-Purdue University Indianapolis. "Instead, we tend to focus on the symptoms." To combat pollution and its health effects, scientists are urging cities, states and entire nations to commit to community-engaged research and learning. Find out more in this NSF [Discovery](#).



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10

Record-breaking ocean heat fueled Hurricane Harvey

New analysis led by the National Center for Atmospheric Research found that in the weeks before Hurricane Harvey tore across the Gulf of Mexico and plowed into the Texas coast in August 2017, waters in the Gulf of Mexico were warmer than any time on record. These hotter-than-normal conditions supercharged the storm, fueling it with vast stores of water that broke precipitation records and set the stage for devastating flooding after it stalled near Houston. Read the full story and learn more in this NSF [News From the Field](#) item.

